Biodiversity Conservation on Mount Elphinstone, Sunshine Coast

Complaint Investigation 990215

FPB/IRC/31

July 2000

103-06345/

Table of Contents

The Investigation **1**

Background 1

a) Mushroom resources of Mount Elphinstone *1*

b) Forest management on Mount Elphinstone *2*

Investigation Findings **3**

1. Code requirements for biological diversity in operational plan approval 3

2. Conservation of biological diversity 4

a) Biodiversity factors applicable to mushroom resources *4*

b) Biodiversity factors applicable to snags *6*

c) Reasonableness of the district manager's approval of operational plans *6*

Conclusions **9**

Recommendations **9**

The Investigation

In August 1999, two residents of the Sunshine Coast complained that forest practices in operational plans[1] approved by the district manager of the Sunshine Coast Forest District (the district) did not adequately protect the habitat of mushrooms[2] in mature forests. They believed that an approved road and cutblock in the Mount Elphinstone area, between Sechelt and Gibsons on the Sunshine Coast, would eliminate mature forest habitat that supports many species of mushrooms.

The complainants were also concerned about the effects of the road construction and timber harvesting on dead trees and stumps scattered throughout the area, which are used by wildlife such as birds and small mammals. Snags are important for wildlife, particularly for birds that nest in cavities or feed on wood-boring insects. The complainants were concerned that snags would be removed by road clearing and clearcutting. The complainants also believed that cavity-nesting species would be more visible to predators near new forest openings.

The Board examined whether the approved plans met Forest Practices Code requirements, including the requirements concerning conservation of biological diversity. The Board also examined the reasonableness of the ministry's approval of operational plans.

Background

a) Mushroom resources of Mount Elphinstone

For many years, the Mount Elphinstone area has had a special reputation among people interested in forest mushrooms. The area has almost no remaining old growth forest (over 250 years of age) because fires and timber harvesting removed most of the forest in the late 1800's. However, the forest that grew after the fires is now mature (90 - 120 years old) and includes scattered veteran trees that survived those fires.

These forests contain an unusual variety and abundance of mushrooms. One mushroom expert[3] has identified more than 60 species of mushrooms in the area, including five that are specific to mature and old growth forests. However, there is no inventory of mushrooms in BC because mushrooms grow underground. They appear on the surface only when conditions are right, so an inventory requires a well-informed searcher in the right places at exactly the right times.

In response to a 1995 complaint to the Board,[4] a mushroom expert with the Ministry of Forests reviewed what was known about mushrooms on the Sunshine Coast.[5] She noted that there was no information to decide whether various species of mushroom were rare or not. Only 500 of

---

1 Forest development plans and silviculture prescriptions are "operational plans" under the Code.

2 The term "mushrooms" is used for simplicity but, in this report, means macrofungi, a group that includes mushrooms but also puffballs, morels, cup fungi and other large fungi.

3 P. Kroeger of Vancouver is an author of a dozen papers on mushrooms in BC.

4 See the Board's 1996 publication *Final Report – Forest Practices Board Complaint 950036*, FPB/IRC/02, 23 pp.

5 Berch, S.M., 1996, *Tricholoma apium at the Roberts Creek Study Forest: a scientific review*, 19 pp.

perhaps 2,000 species of mushrooms in BC had even been identified to date. Any given forest area could have hundreds of mushroom species, many unidentified. The Board, in its report on the 1995 complaint, put considerable weight on the mushroom expert's report, considering it the most comprehensive and accurate information available at that time.

b) Forest management on Mount Elphinstone

In the early 1990s, the district established a study forest in the Mount Elphinstone area to research timber harvesting strategies. Nine cutblocks were to be harvested under the Small Business Forest Enterprise Program (SBFEP): three cutblocks by clearcut,[6] three by shelterwood[7] and three by extended rotation.[8] The effects of the three types of silvicultural systems on various components of the ecosystem would then be studied. At the same time, local residents asked that 1 500 hectares of Mount Elphinstone, including areas proposed for the harvesting research, be made a protected area.

When clearcutting of the first research cutblock was approved in late 1995, a resident complained that the district had failed to adequately protect the habitat of a rare mushroom when approving the silviculture prescription. The Board investigated and decided that the district manager had complied with the *Forest Practices Code of British Columbia Act* and Regulations (the Code).

In late 1996, Ministry of Forests district and regional staff wrote a Mount Elphinstone Forest Management Plan.[9] A draft was presented at a Local Resource Use Plan[10] (LRUP) meeting in February 1997 and the forest management plan was completed in December. There was strong and divided public response to the plan. Local residents formed a committee to develop their own forest management plan, one that proposed "low impact" forest management. Low impact meant using techniques that avoid gullies and areas of high erosion potential, using existing roads only, removing less than 12 percent of the forest canopy at each pass and using high-line timber removal methods to minimize surface disturbance.

In early 1998, cabinet designated 150 hectares of land on Mount Elphinstone as a protected area. This was much less than the 1 500 hectares requested by local residents.

The district manager approved a forest development plan in June 1998 and silviculture prescriptions for several research cutblocks in December 1998. When clearing of the road right-of-way to one cutblock began in early August 1999, local residents set up a blockade. In late August, two residents filed a complaint about the approval of the road construction and harvesting of the cutblock. They maintained that anything smaller than the 1 500-hectare reserve could not adequately protect the habitat of mushrooms in mature forests. As of the release of this report in July 2000, no further road construction or timber harvesting has occurred.

---

[6] Retain up to one isolated veteran Douglas fir or cedar tree per hectare.
[7] Retain 20-30 trees per hectare, harvesting in two passes 3-7 years apart.
[8] Retain 20-30 trees per hectare, harvesting in five passes over a 55-year period.
[9] B. Smart and F. Nuszdorfer, 1998. *1998 Mt. Elphinstone Forest Management Plan*, 18 pp.
[10] Local resource use plans and forest management plans are not "operational plans" under the Code.

Investigation Findings

1. Code requirements for biological diversity in operational plan approval

The district manager approved[11] the forest development plan and silviculture prescriptions of concern under section 40 of the Act. Section 40 allows a district manager to approve an operational plan prepared by district staff, under the SBFEP, if the plan meets the requirements of the Act and regulations. That test is different from the test in section 41 for approval of plans prepared by a licensee. For section 41 approval, a district manager must also be satisfied that an operational plan will adequately manage and conserve forest resources in the plan area. 'Forest resources' include biological diversity. Biological diversity includes the resources of concern to the complainants: the habitat of mushrooms in mature forests, and dead trees and snags for wildlife. The reason for the difference between sections 40 and 41 is not clear.

The preamble to the Code states that British Columbians desire "balancing economic, productive, spiritual, ecological and recreational values of forests (while) conserving biological diversity... and other forest resources." The Board considers that a district manager should have to be satisfied that operational plans adequately manage and conserve forest resources before approving the plans, regardless of whether the plans are prepared by district staff or licensees. The Board has raised this concern in the past and has recommended that government change section 40 of the Act to require that, before approving operational plans prepared by district staff, district managers must explicitly consider whether such plans adequately manage and conserve forest resources. Section 40 has not yet been revised.

In this case, district staff prepared the plans and there is no Code requirement for the district manager to consider whether the plans would adequately manage and conserve forest resources. Notwithstanding what the Code requires, the Board is satisfied that the district manager did consider whether these operational plans would adequately manage and conserve biological diversity before giving approval under section 40.

Finding #1

The district manager considered whether the operational plans would adequately manage and conserve the forest resources, including biological diversity, of the areas to which they applied. In deciding to approve the plans, the district manager was satisfied that biological diversity would be adequately managed and conserved.

[11] Technically, the district manager "gives effect" to plans under section 40, as opposed to "approving" plans under section 41.

2. Conservation of biological diversity

The district manager stated that, before he approved the silviculture prescription and forest development plan, he was satisfied that biological diversity (including the habitat of mushrooms in mature forests, and dead trees and snags for wildlife) would be maintained or conserved. The Board considered whether that was reasonable in the circumstances.

a) Biodiversity factors applicable to mushroom resources

The Board examined the information available to the district manager about managing and conserving mushroom resources in the complaint area. Forest Practices Code guidebooks provided general biodiversity management information. The complainants and others provided information on habitat requirements of mushrooms in mature forests.

Most guidebook provisions are not, of themselves, law. They describe practices and results that are consistent with the Code. The *Biodiversity Guidebook* advises against managing biological diversity based on individual species. The impact of forest management practices on many species, especially mushrooms, is unknown. Practices that benefit some species can harm others. Instead, the guidebook recommends providing suitable habitat conditions for all native species by maintaining a diversity of habitats.

The guidebook also recommends managing biological diversity at both the landscape and the stand level.[12] At the landscape level, forest practices should imitate natural disturbance regimes.[13] Mount Elphinstone has infrequent disturbances[14] such as wildfires, so the typical forest has scattered patches of even-aged Douglas fir with snags and veteran trees. The guidebook suggests that small clearcuts with wildlife tree patches can imitate small-scale disturbances. Some large openings and large leave areas are suitable as long as forested corridors are retained along streams and across elevations. At the stand level, the guidebook recommends maintaining wildlife trees as individuals and patches.

The silviculture prescription recommended that old fire-scorched Douglas fir snags be left standing. Permanent leave trees were to be left to provide future snags, coarse woody debris and structural diversity. Within 20 metres of streams, trees would be harvested under the shelterwood system. There was a 10-hectare wildlife tree patch immediately south of the cutblock. These are all accepted stand level strategies to maintain biodiversity, according to the *Biodiversity Guidebook*.

The complainants' concern with mushroom habitat could not be addressed with only stand level biodiversity management. Wildlife trees and small wildlife tree patches are unlikely to preserve the mature forest environmental conditions. Landscape-level biodiversity provisions were required to retain large leave areas to offset large openings according to the *Biodiversity*

---

[12] "Landscape level" means over a planning area, generally up to about 100 000 hectares in size, delineated according to topographic or geographic features such as a watershed or series of watersheds. "Stand level" means a small, relatively homogeneous land unit that can be managed under a single set of treatments.

[13] Ministry of Forests and BC Environment, 1995. *Biodiversity Guidebook, pp. 11.*

[14] Characterized in the guidebook as "Natural Disturbance Type 2."

Guidebook. Government's intention is for biodiversity management at the landscape level to be addressed through landscape unit planning.

There are no approved landscape unit plans for Mount Elphinstone, but there are proposed landscape units. The Chapman Unit includes the complaint area and has, since at least 1998, been rated as low biodiversity emphasis;[15] high biodiversity emphasis[16] is proposed for the northern parts of the district. The Board did not examine the district's rationale for the proposed landscape units.

In examining local implementation of landscape-level biodiversity management, the Board reviewed recommendations in the ministry's 1998 Mount Elphinstone Forest Management Plan. That plan is not legally binding, but it provided landscape level planning guidance that was used in the forest development plan.

The management plan includes a brief description of mushroom resources but says little about habitat requirements. The plan emphasizes retaining the few remaining patches of old growth but does not deal with mushroom habitat in such forests. None of the road building and timber harvesting at issue in this complaint was proposed in old growth patches.

Nevertheless, the plan contains provisions for ecosystem-based landscape-level forest management:

- Harvest blocks are to be spread over space and time, using a variety of silviculture systems and tree retention patterns, and retaining old seral stages (greater than 250 years).
- Fragmentation of forest habitat is to be reduced by leaving large areas with "interior forest conditions" and minimizing active roads.
- Traditional clearcuts are to be replaced with clearcuts that have irregular boundaries, and reserves of individual trees and tree patches.

The ministry mushroom expert, in her 1996 report, considered whether implementation of the *Biodiversity Guidebook* recommendations could ensure maintenance of mushrooms. She concluded that there was not enough information available on which to base a decision. The Board agrees with that conclusion. However, the Board considers that retention of wildlife tree patches, and spreading harvesting over time and space with large areas of mature forest between blocks, will help to maintain habitat suitable for mushrooms in mature forests.

---

[15] The *Biodiversity Guidebook*, pp. 7 and 8, says:
"Low biodiversity emphasis is planning to provide habitat for a wide variety of species, but to significantly alter the pattern of natural biodiversity so that some native plants species may well not survive. It is appropriate for areas where social and economic demands, such as timber supply, are the primary objectives."

[16] "High biodiversity emphasis planning gives a high priority to biodiversity conservation but has the greatest impact on timber harvest. Such planning is appropriate in areas where biodiversity conservation is a high management priority."

Finding #2

The district incorporated standard landscape- and stand-level strategies recommended in the *Biodiversity Guidebook* into the Mount Elphinstone operational plans.

b) Biodiversity factors applicable to snags

The wildfires left scattered older veteran trees and killed others, resulting in 10- to 15-metre stump snags scattered throughout the mature stands. There are also scattered large dead-tree snags, particularly in a wildlife tree patch south of the cutblock of concern in this complaint.

Snags are important for wildlife, particularly for birds that nest in cavities or feed on wood-boring insects. The complainants were concerned that snags would be removed by road clearing and clearcutting. The complainants also believed that cavity-nesting species would be more visible to predators near new forest openings.

The Mount Elphinstone forest management plan specified that large snags were to be retained if possible, especially in wildlife tree patches. The silviculture prescription required that the stump snags, which were of concern to the complainant, be retained only where yarding efficiency permits. The Board anticipates that yarding efficiency will not allow retention of most snags, except in wildlife tree patches.

The Board considers that the stumps in the complaint area have low wildlife or biodiversity values in their current state. They are decayed with no branches or outer bark. Such snags are little used by cavity-nesters; their primary value is to become coarse woody debris on the forest floor. Both the stump and standing dead-tree types of snags are scattered through surrounding stands, so they are not a particularly scarce feature. Removal of snags in the course of road clearing or yarding will have no significant effect on the conservation and management of biodiversity or of wildlife values.

Finding #3

Removal of most of the snags in the cutblock and associated road will have no significant effect on the conservation and management of biodiversity or of wildlife values.

c) Reasonableness of the district manager's approval of operational plans

In deciding to approve the plans, the district manager considered whether biological diversity would be adequately managed and conserved.

The Board considered whether the district manager had adequate information available to make his decision. He had the local public input provided in the local resource use planning process; he had mushroom information from two experts, one with the ministry and one

external to government; he had the *Biodiversity Guidebook*; and, he had a forest management plan that provided some landscape level guidance. The Board views that information as adequate to make a decision.

Finding #4

Information from mushroom experts, input from local resource use planning, and a management plan incorporating strategies from the *Biodiversity Guidebook* provided the district manager with adequate information to satisfy himself that the operational plans adequately managed and conserved biological diversity.

The Board considered whether the district manager had made reasonable efforts to record and explain his reasoning to the public, including the complainants. There was considerable general public discussion during the local resource use planning process. In addition, the district manager discussed the complainants' concerns extensively with them and others, both in person and by correspondence, in August and September 1999.

In early September, the district manager offered the complainants a number of concessions to expedite resolution of the issues. He offered to:

- accelerate the landscape unit planning process to deal with biodiversity management at the landscape level;
- commit to protect all remnant old growth veterans and old growth patches;
- forego clearcutting in the area, but continue to use partial-cut silviculture systems;
- continue to make silviculture prescriptions available for public review;
- research and demonstrate an area with a "holistic, uneven age management prescription" where the complainants could choose a suitable area and set management objectives, and the district would provide a professional forester to write the prescription; and
- discuss any strategic and operational plans, including on-site meetings and discussions.

The complainants appreciated district staff's efforts but disagreed with the result. They maintained that it was necessary to preserve a 1 500-hectare area. The Board considers that the district manager made substantial efforts to explain his reasoning and to resolve the dispute underlying the complaint and the roadblock.

Finding #5

The district manager appropriately recorded and explained his reasoning in approving the operational plans but did not alleviate the complainants' concerns about conservation of biodiversity.

The Board also examined whether the district manager considered the available information. The ministry mushroom expert's report indicated that there was not enough known to categorically determine whether general biodiversity conservation strategies would protect mushrooms in mature forests. Research on the effects of various silvicultural systems, which was to result from the approved harvesting, could provide some needed biodiversity management information. Surrounding stands had similar structure and ecological attributes and were not scheduled for harvest in the immediate future. The district manager decided that the application of measures in the *Biodiversity Guidebook* combined with the small size of proposed operations, the research nature of the operations and the characteristics of surrounding stands would be sufficient to adequately manage and conserve the forest resources.

While the information on mushroom habitat may not have been comprehensive, the *Biodiversity Guidebook* recommended that a biodiversity conservation strategy be based on ecological principles, not individual species' (such as forest mushrooms) needs. In addition, the individual cutblocks, each less than 15 hectares in size, were quite small compared to the 10 000-hectare forest management plan area.

Overall, the district manager demonstrated that he was familiar with available information, including the mushroom expert's report, the *Biodiversity Guidebook* and the forest management plan. He considered and referred to that information. He balanced the various factors in a rational way. Based on the available information, the district manager maintained that he was satisfied that the forest development plan would adequately manage and conserve the biological diversity of the Mount Elphinstone area. He was also satisfied that, in association with surrounding stands, the silviculture prescription could adequately manage and conserve the mushroom communities and snags associated with mature forest stands.

The complainants continued to fundamentally disagree with the district manager's view. The disagreement was about how to proceed in the face of uncertainty about conservation of biological diversity. It was not enough, in the complainants' view, to decide that general forest management could maintain and conserve biological diversity. They believed that forest fragmentation and isolation would inevitably result in loss of genetic diversity and that only preservation of the entire 1 500-hectare area would ensure the maintenance of biological diversity.

The Board appreciates the complainants' perspective on risk management in the face of significant uncertainties, but it does not agree that no further harvesting could be allowed in the circumstances. Approval of the forest development plan and silviculture prescriptions, notwithstanding concerns about the management and conservation of some aspects of biological diversity, was reasonable in the circumstances.

Finding #6

The district manager's decision, that landscape level strategies described in the forest management plan and stand level strategies in the silviculture prescription would be adequate to manage and conserve mushroom habitat and snag components of mature forest habitat types in the plan areas, was reasonable.

Conclusions

1. Although the district manager did not explicitly apply the section 41 test of adequacy of management and conservation of forest resources, he applied a comparable test to be satisfied that forest resources, including biological diversity, would be adequately managed and conserved when he approved operational plans at issue in this complaint.

2. The district manager considered adequate information to determine whether approval of operational plans for the Mount Elphinstone area would adequately manage and conserve biological diversity. His approval of those plans was reasonable.

3. The district manager made efforts to accommodate the complainants' concerns and to explain his decisions. However, the approved practices were not acceptable to the complainants, who remain opposed to any forest practices within a 1 500-hectare area.

Recommendations

1. Sound forest management, in the Board's view, means that forest resources must be managed and conserved regardless of whether the timber is allocated to small businesses or larger licensees. The Board has recommended[17] that government revise section 40 of the Act to match section 41, but that has not happened. The Board reiterates that recommendation.

2. Landscape unit planning is essential for effective management of biological diversity. Given the apparent biological diversity in the Mount Elphinstone area, the Board recommends that the district manager re-examine whether a low biodiversity emphasis is appropriate in the Chapman Landscape Unit. In addition, the Board encourages the district manager to follow through on his offer to the complainants to accelerate landscape unit planning.

3. Given the importance of stand level measures in the management of biological diversity and the local public interest, the Board also recommends that the district manager follow through on his offer to the complainants to continue to make silviculture prescriptions for the Mount Elphinstone area available for the public to review.

The panel of the Board that concluded this report was John Cuthbert, Fred Parker and Liz Osborn.

---

[17] The Forest Practices Board has released a special report entitled: *Enhancing the Board's Ability to Appeal Forest Development Plan Approvals: A Special Report on the Need to Amend Section 40 of the Forest Practices Code of British Columbia Act and Section 2 of the Administrative Review and Appeal Regulation*. The Board's report was released in January 2000.

Location of Mount Elphinstone Complaint